



RECEIVED

JUL 22 2003

TECH CENTER 1600/2900

SEQUENCE LISTING

(1) GENERAL INFORMATION:

(i) APPLICANT: Weiner, Amy J.
Houghton, Michael

(ii) TITLE OF INVENTION: Conserved Motif of Hepatitis C Virus
E2/NS1 Region

(iii) NUMBER OF SEQUENCES: 134

(iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: Chiron Corporation
(B) STREET: 4560 Horton Street
(C) CITY: Emeryville
(D) STATE: CA
(E) COUNTRY: USA
(F) ZIP: 94608-2916

(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.25

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: US 08/823,980
(B) FILING DATE: 25-MARCH-1997
(C) CLASSIFICATION:

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Robins, Roberta L.
(B) REGISTRATION NUMBER: 33,208
(C) REFERENCE/DOCKET NUMBER: CHIR-0108

(ix) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: 650-325-7812
(B) TELEFAX: 650-325-7823

(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 6 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Xaa
(B) LOCATION: 1
(D) OTHER INFORMATION: /label= variable
/note= "Represents Ala, Arg, Asp, Gly, Lys, Ser,

or Thr"

(ix) FEATURE:
(A) NAME/KEY: Xaa
(B) LOCATION: 2
(D) OTHER INFORMATION: /label= variable
/note= "Represents Ile, Leu, Met, Phe or Trp"

(ix) FEATURE:
(A) NAME/KEY: Xaa
(B) LOCATION: 3
(D) OTHER INFORMATION: /label= variable
/note= "Represents Leu or Phe"

(ix) FEATURE:
(A) NAME/KEY: Xaa
(B) LOCATION: 6
(D) OTHER INFORMATION: /label= variable
/note= "Represents Ala or Gly"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Xaa Xaa Xaa Xaa Xaa Xaa
1 5

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 32 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:
(A) NAME/KEY: Xaa
(B) LOCATION: 1
(D) OTHER INFORMATION: /label= Dpr
/note= 2,3-diaminopropionic is acetyl cysteine

(ix) FEATURE:
(A) NAME/KEY: Xaa
(B) LOCATION: 2
(D) OTHER INFORMATION: /label= Ahe
/note= 2-amino heptanoic is butyl alanine

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Xaa Xaa Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Ser
1 5 10 15

Gly Phe Val Ser Leu Leu Ala Pro Gly Ala Lys Gln Asn Val Gln Leu
20 25 30

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 5 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

Val Ser Leu Leu Ala
1 5

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Ser Leu Leu Ala Pro Gly Ala
1 5

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 5 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Leu Ala Pro Gly Ala

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 7
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Ala, Pro or Ser"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Ser Leu Leu Xaa Xaa Gly Xaa
1 5

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 7
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Ala, Pro or Ser"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Ser Leu Phe Xaa Xaa Gly Xaa
1 5

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 1
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Any Amino Acid"

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Any Amino Acid"

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 8
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Any Amino Acid"

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 14
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Any Amino Acid"

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 16
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Any Amino Acid"

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 17
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Any Amino Acid"

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 21
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Any Amino Acid"

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 22
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Any Amino Acid"

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 24
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Any Amino Acid"

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 27
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Any Amino Acid"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Xaa	Thr	Xaa	Val	Thr	Gly	Gly	Xaa	Ala	Ala	Arg	Thr	Thr	Xaa	Gly	Xaa
1				5					10				15		
Xaa	Ser	Leu	Phe	Xaa	Xaa	Gly	Xaa	Ser	Gln	Xaa	Ile	Gln	Leu	Ile	
			20					25				30			

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Ala	Thr	Tyr	Ala	Thr	Gly	Ala	Ala	Gln	Gly	His	Ala	Thr	Asn	Ser	Phe
1				5					10				15		
Val	Ser	Leu	Phe	Arg	Ser	Gly	Ala	Ser	Gln	Asn	Leu	Lys	Leu	Val	
			20					25				30			

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Ser	Thr	Gln	Val	Thr	Gly	Gly	Gln	Ala	Ala	His	Thr	Val	Arg	Gly	Val
1				5					10				15		
Ala	Ser	Ile	Phe	Ser	Pro	Gly	Ser	Arg	Gln	Asp	Ile	Ser	Leu	Ile	
			20					25				30			

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val His Gly Ile
1 5 10 15

Ala Ser Leu Phe Ser Leu Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Ser Thr His Val Met Gly Ala Gln Gln Gly Arg Val Ala Lys Gly Phe
1 5 10 15

Thr Ser Leu Phe Gly Pro Gly Pro Ala Gln Lys Ile Gly Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

Ser Thr His Val Thr Gly Ala Val Gln Gly His Ser Ile Arg Gly Leu
1 5 10 15

Thr Ser Leu Phe Thr Ser Gly Pro Ala Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Glu Thr His Val Thr Gly Gly Ile Ala Ala Lys Thr Thr Ala Ser Leu
1 5 10 15

Thr Gly Leu Phe Asn Leu Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Glu Thr His Val Thr Gly Gly Asn Ala Gly Arg Ala Ala Ala Gly Ile
1 5 10 15

Ala Gly Leu Phe Thr Leu Gly Ala Lys Gln Asn Val Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Gln Thr Arg Val Thr Gly Gly Thr Ala Ala Gln Ser Thr Ala Arg Ile
1 5 10 15

Ala Gly Leu Phe Ser Leu Gly Ala Arg Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

Gln Thr His Val Met Gly Gly Thr Ala Gly Arg Asn Ala Tyr Gly Leu
1 5 10 15

Thr Ser Phe Leu Ser Val Gly Ala Ser Gln Lys Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

Glu Thr His Val Met Gly Gly Ala Ala Ser Ser Thr Thr Tyr Arg Phe
1 5 10 15

Ala Ser Leu Phe Thr Ser Gly Pro Ala Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

Glu Thr His Val Thr Gly Gly Ser Ala Ala Ser Thr Thr Ala Thr Phe
1 5 10 15

Ser Lys Leu Phe Met Pro Gly Ala Ser Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

Gly Thr Thr Arg Val Gly Ala Ala Ala Arg Thr Thr Ser Ser Phe
1 5 10 15

Ala Ser Leu Leu Thr His Gly Pro Ser Gln Asn Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:21:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Gly Thr His Val Thr Gly Gly Ala Ala Ala Arg Asp Ala Phe Arg Phe
1 5 10 15

Ser Ser Leu Phe Thr Arg Gly Pro Ser Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:22:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

Ala Thr Asn Met Thr Gly Gly Ala Pro Ala Arg Thr Thr Tyr Lys Leu
1 5 10 15

Thr Thr Leu Phe Ser Tyr Gly Ala Ser Gln Lys Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:23:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

His	Asn	His	Val	Thr	Gly	Gly	Thr	Ser	Ala	Arg	Asn	Thr	Phe	Gly	Ile
1				5					10						15
Thr	Thr	Leu	Phe	Thr	Gln	Gly	Pro	Ser	Gln	Lys	Leu	Gln	Leu	Val	
			20					25						30	

(2) INFORMATION FOR SEQ ID NO:24:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Gly	Thr	His	Val	Thr	Gly	Gly	Ala	Ala	Ala	Arg	Asn	Ala	His	Ser	Leu
1				5				10							15
Thr	Ser	Leu	Leu	Ala	Pro	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Ile	
			20					25						30	

(2) INFORMATION FOR SEQ ID NO:25:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Thr	Thr	Arg	Val	Ser	Gly	Gly	Thr	Ala	Ala	His	Thr	Thr	Ala	Gly	Leu
1				5					10						15
Thr	Ser	Leu	Phe	Ser	Pro	Gly	Pro	Arg	Gln	Asn	Ile	His	Leu	Val	
			20					25						30	

(2) INFORMATION FOR SEQ ID NO:26:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Thr	Thr	His	Val	Ser	Gly	Gly	Thr	Ala	Gly	Arg	Thr	Thr	Ala	Ser	Leu
1				5					10				15		
Thr	Ser	Phe	Phe	Ala	Pro	Gly	Ala	Ser	Gln	Arg	Ile	Gln	Leu	Val	
			20					25				30			

(2) INFORMATION FOR SEQ ID NO:27:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Thr	Thr	His	Val	Thr	Gly	Gly	Ala	Thr	Gly	His	Thr	Thr	Ser	Gly	Ile
1				5				10				15			
Ala	Ser	Leu	Phe	Leu	Pro	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Ile	
		20						25				30			

(2) INFORMATION FOR SEQ ID NO:28:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Asp	Thr	Tyr	Ala	Ser	Gly	Gly	Ala	Gln	Gly	Arg	Ser	Thr	Leu	Gly	Phe
1				5				10				15			
Thr	Ser	Leu	Phe	Thr	Pro	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Ile	
		20						25				30			

(2) INFORMATION FOR SEQ ID NO:29:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

Asp	Thr	Tyr	Ala	Ser	Gly	Gly	Ala	Ala	Gly	Arg	Ala	Thr	Tyr	Gly	Ile
1				5				10						15	
Thr	Ser	Leu	Phe	Ala	Pro	Gly	Ala	Ser	Gln	Asn	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:30:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

Arg	Thr	Tyr	Ala	Ser	Gly	Gly	Ala	Ala	Gly	Arg	Thr	Thr	His	Gly	Phe
1				5				10					15		
Thr	Ser	Leu	Phe	Ser	Thr	Gly	Ala	Arg	Gln	Asn	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:31:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

Gln	Thr	Tyr	Val	Thr	Gly	Gly	Lys	Ala	Ala	Gln	Thr	Val	Ser	Gly	Phe
1				5				10					15		
Thr	Gly	Leu	Phe	Ser	Ser	Gly	Pro	Ser	Gln	Lys	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:32:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

Asp	Thr	Tyr	Val	Ser	Gly	Gly	Ala	Ala	Ala	Arg	Ser	Ile	Ser	Gly	Phe
1				5					10					15	
Thr	Ser	Leu	Phe	Thr	Pro	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:33:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

Ser	Thr	Tyr	Val	Thr	Gly	Gly	Glu	Ala	Ser	Arg	Thr	Thr	Arg	Gly	Phe
1				5					10					15	
Ala	Ser	Leu	Phe	Thr	Leu	Gly	Ser	Ser	Gln	Lys	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:34:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

Asn	Thr	Tyr	Val	Thr	Gly	Gly	Ser	Ala	Gly	Arg	Ala	Val	Ala	Gly	Phe
1				5					10					15	
Ala	Gly	Leu	Leu	Gln	Pro	Gly	Ala	Lys	Gln	Asn	Val	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:35:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 31 amino acids

- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

His	Thr	Arg	Val	Thr	Gly	Gly	Gln	Val	Ala	Phe	Arg	Thr	His	Gly	Leu
1				5					10				15		
Val	Ser	Leu	Phe	Thr	Gln	Gly	Pro	Ser	Gln	Lys	Ile	Gln	Leu	Val	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:36:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

His	Thr	His	Val	Thr	Gly	Gly	Arg	Val	Ala	Ser	Ser	Thr	Gln	Ser	Leu
1				5					10				15		
Val	Ser	Trp	Leu	Ser	Gln	Gly	Pro	Ser	Gln	Lys	Ile	Gln	Leu	Val	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:37:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

His	Thr	Arg	Val	Thr	Gly	Gly	Val	Gln	Gly	His	Val	Thr	Ser	Thr	Leu
1				5					10				15		
Thr	Ser	Leu	Phe	Arg	Pro	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:38:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids

- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

Asn	Thr	Arg	Val	Thr	Gly	Gly	Val	Gln	Gly	Arg	Asp	Thr	Ser	Gly	Leu
1				5				10					15		
Val	Ser	Leu	Phe	Ser	Leu	Gly	Pro	Ser	Gln	Lys	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:39:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

Asp	Thr	His	Val	Thr	Gly	Gly	Ala	Gln	Ala	Lys	Thr	Thr	Asn	Arg	Leu
1				5				10					15		
Val	Ser	Met	Phe	Ala	Ser	Gly	Pro	Ser	Gln	Lys	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:40:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

Glu	Thr	His	Val	Thr	Gly	Gly	Ala	Ser	Ala	Arg	Thr	Thr	Gln	Arg	Phe
1				5				10					15		
Thr	Ser	Phe	Phe	Asp	Leu	Gly	Pro	Ser	Gln	Lys	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:41:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids

- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

Thr	Thr	Tyr	Met	Thr	Gly	Gly	Ala	Asn	Ala	Arg	Thr	Thr	Gln	Gly	Phe
1				5					10				15		
Val	Ser	Leu	Phe	Thr	Pro	Gly	Pro	Ala	Gln	Lys	Ile	Gln	Leu	Val	
			20					25				30			

(2) INFORMATION FOR SEQ ID NO:42:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

Glu	Thr	His	Val	Thr	Gly	Gly	Thr	Ser	Ala	Arg	Thr	Thr	Gln	Gly	Phe
1				5					10				15		
Val	Ser	Leu	Phe	Ser	Ala	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val	
			20				25				30				

(2) INFORMATION FOR SEQ ID NO:43:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

Gly	Thr	His	Val	Thr	Gly	Gly	Gln	Ala	Ala	Arg	Thr	Thr	Gln	Ser	Phe
1				5				10					15		
Thr	Ser	Leu	Phe	Ser	Pro	Gly	Pro	Gln	Gln	Lys	Ile	Gln	Leu	Ile	
			20				25				30				

(2) INFORMATION FOR SEQ ID NO:44:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids

- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

Arg	Thr	His	Val	Thr	Gly	Gly	Lys	Ala	Ala	His	Thr	Thr	Lys	Gly	Phe
1					5					10			15		
Ala	Ser	Leu	Phe	Thr	Pro	Gly	Pro	Ser	Gln	Asn	Ile	Gln	Leu	Ile	
			20					25				30			

(2) INFORMATION FOR SEQ ID NO:45:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

Glu	Thr	Arg	Val	Thr	Gly	Ala	Val	Gln	Gly	His	Gly	Ala	Leu	Gly	Leu
1					5				10			15			
Ala	Ser	Leu	Phe	Thr	Pro	Gly	Pro	Ser	Gln	Lys	Ile	Gln	Leu	Ile	
			20					25				30			

(2) INFORMATION FOR SEQ ID NO:46:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

Glu	Thr	Arg	Val	Thr	Gly	Ala	Ile	Ala	Gly	Arg	Thr	Ala	Ser	Ser	Phe
1					5				10			15			
Ala	Gly	Leu	Phe	Thr	Ser	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val	
			20					25				30			

(2) INFORMATION FOR SEQ ID NO:47:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

Glu Thr Arg Val Thr Gly Gln Gln Val Gly Arg Thr Thr Gln Ser Leu
1 5 10 15

Thr Ser Leu Phe Thr Pro Gly Pro Ser Gln Thr Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:48:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

Gln Thr Arg Val Thr Gly Ala Gln Val Gly Arg Thr Thr Ser Ser Leu
1 5 10 15

Thr Ser Leu Phe Thr Pro Gly Pro Ser Gln Asn Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:49:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

Arg Thr Gln Val Thr Gly Ala Gln Ala Gly His Thr Thr Ser Gly Leu
1 5 10 15

Ala Ser Leu Phe Thr Pro Gly Pro Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:50:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

Glu	Thr	His	Val	Thr	Gly	Gly	Ser	Ala	Gly	His	Thr	Val	Ser	Gly	Phe
1				5					10						15
Val	Ser	Leu	Leu	Ala	Pro	Gly	Ala	Lys	Gln	Asn	Val	Gln	Leu	Ile	
				20				25					30		

(2) INFORMATION FOR SEQ ID NO:51:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

Glu	Thr	His	Val	Thr	Gly	Gly	Ser	Ala	Gly	His	Thr	Val	Thr	Gly	Ile
1				5					10						15
Ala	Ser	Leu	Phe	Thr	Ser	Gly	Ala	Lys	Gln	Asn	Ile	Gln	Leu	Ile	
				20				25					30		

(2) INFORMATION FOR SEQ ID NO:52:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

Ser	Thr	His	Val	Thr	Gly	Gly	Thr	Ala	Ala	His	Thr	Val	Ala	Gly	Phe
1				5					10						15
Ser	Ser	Leu	Phe	Thr	Val	Gly	Pro	Lys	Gln	Asn	Ile	Gln	Leu	Ile	
				20				25					30		

(2) INFORMATION FOR SEQ ID NO:53:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

Glu	Thr	His	Val	Thr	Gly	Gly	Ala	Ala	Ala	Tyr	Thr	Ala	Ala	Gly	Leu
1				5					10					15	
Ala	Ser	Leu	Phe	Thr	Ser	Gly	Ala	Lys	Gln	Asn	Ile	Gln	Leu	Ile	
			20					25				30			

(2) INFORMATION FOR SEQ ID NO:54:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:

Glu	Thr	His	Val	Thr	Gly	Gly	Ser	Ala	Gly	Arg	Thr	Thr	Ala	Gly	Leu
1				5					10					15	
Val	Gly	Leu	Leu	Thr	Pro	Gly	Ala	Lys	Gln	Asn	Ile	Gln	Leu	Ile	
	20				25				30						

(2) INFORMATION FOR SEQ ID NO:55:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:

Gly	Thr	His	Val	Thr	Gly	Gly	Ser	Ala	Gly	Arg	Ala	Thr	Ala	Gly	Ile
1				5					10					15	
Ala	Gly	Leu	Leu	Thr	Pro	Gly	Ala	Arg	Gln	Asn	Ile	Gln	Leu	Val	
	20				25				30						

(2) INFORMATION FOR SEQ ID NO:56:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:

Lys	Thr	His	Val	Thr	Gly	Gly	Ser	Ala	Ala	Arg	Thr	Thr	Ser	Gly	Ile
1				5				10					15		
Ala	Ser	Leu	Leu	Thr	Pro	Gly	Ala	Lys	Gln	Asn	Val	Gln	Leu	Ile	
				20				25				30			

(2) INFORMATION FOR SEQ ID NO:57:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:

Lys	Thr	Tyr	Val	Thr	Gly	Gly	Ser	Gln	Ala	Gln	Ala	Thr	Phe	Gly	Phe
1				5				10					15		
Thr	Ser	Leu	Leu	Gln	Gln	Gly	Ala	Lys	Gln	Asn	Ile	Gln	Leu	Ile	
				20				25				30			

(2) INFORMATION FOR SEQ ID NO:58:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:

Glu	Thr	Thr	Val	Thr	Gly	Gly	Ser	Ala	Ala	His	Gly	Ala	Leu	Gly	Ile
1				5				10					15		
Ala	Ser	Leu	Phe	Asn	Gln	Gly	Ala	Arg	Gln	Asn	Ile	Gln	Leu	Ile	
				20				25				30			

(2) INFORMATION FOR SEQ ID NO:59:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

Glu	Thr	Tyr	Val	Thr	Gly	Gly	Ala	Ser	Ala	Arg	Ser	Thr	Phe	Thr	Leu
1				5					10				15		
Val	Gly	Leu	Phe	Lys	Gln	Gly	Ser	Gln	Gln	Asn	Ile	Gln	Leu	Val	
			20				25					30			

(2) INFORMATION FOR SEQ ID NO:60:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:

Gln	Thr	Tyr	Val	Ser	Gly	Gly	Ser	Ser	Gly	Arg	Thr	Thr	Ser	Gly	Leu
1				5				10					15		
Val	Ser	Ile	Phe	Ser	Pro	Gly	Ala	Ser	Gln	Asn	Leu	Gln	Leu	Ile	
			20				25				30				

(2) INFORMATION FOR SEQ ID NO:61:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:

Glu	Thr	Tyr	Val	Ser	Gly	Gly	Ala	Ala	Ala	Gln	Thr	Thr	Ala	Arg	Phe
1					5				10				15		
Ala	Gly	Phe	Phe	Gln	Ser	Gly	Ala	Lys	Gln	Asn	Ile	Gln	Leu	Ile	
			20				25					30			

(2) INFORMATION FOR SEQ ID NO:62:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:

Glu	Thr	Tyr	Val	Ser	Gly	Gly	Ser	Ala	Ala	Gln	Thr	Thr	Ala	Gly	Phe
1				5				10					15		
Val	Arg	Leu	Phe	Glu	Thr	Gly	Pro	Lys	Gln	Asn	Ile	Gln	Leu	Ile	
			20				25					30			

(2) INFORMATION FOR SEQ ID NO:63:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

Ser	Thr	Tyr	Val	Ser	Gly	Gly	Ala	Gln	Ala	Arg	Ala	Ala	Gln	Gly	Ile
1				5				10				15			
Thr	Ser	Leu	Phe	Ser	Arg	Gly	Ser	Ser	Gln	Lys	Ile	Gln	Leu	Val	
			20				25				30				

(2) INFORMATION FOR SEQ ID NO:64:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:

Ser	Thr	Tyr	Val	Thr	Gly	Gly	Thr	Gln	Gly	Arg	Ala	Ala	Ser	Gly	Leu
1				5				10				15			
Thr	Ser	Leu	Phe	Ser	Ala	Gly	Ala	Ser	Gln	Asn	Ile	Gln	Leu	Ile	
			20				25				30				

(2) INFORMATION FOR SEQ ID NO:65:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:

Asn	Thr	Tyr	Val	Ser	Gly	Gly	Thr	Ala	Gly	His	Thr	Gly	His	Gly	Leu
1				5				10			15				
Thr	Ala	Leu	Phe	Ser	Pro	Gly	Ala	Ser	Gln	Asn	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:66:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:

Ser	Thr	Ile	Val	Ser	Gly	Gly	Thr	Val	Ala	Arg	Thr	Thr	His	Ser	Leu
1				5				10			15				
Ala	Ser	Leu	Phe	Thr	Gln	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:67:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:

Glu	Thr	Tyr	Thr	Ser	Gly	Gly	Ala	Ala	Ser	His	Thr	Thr	Ser	Thr	Leu
1				5				10			15				
Ala	Ser	Leu	Phe	Ser	Pro	Gly	Ala	Ser	Gln	Arg	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:68:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:

His Thr Leu Thr Thr Gly Gly His Ala Ala Arg Leu Thr Ser Gly Phe
1 5 10 15
Ala Gly Leu Phe Thr Pro Gly Pro Ser Gln Arg Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:69:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:

Glu Thr Ile Val Ser Gly Gly Gln Ala Ala Arg Ala Met Ser Gly Leu
1 5 10 15
Val Ser Leu Phe Thr Pro Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:70:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:

Glu Thr Tyr Thr Ser Gly Gly Asn Ala Gly His Thr Met Thr Gly Ile
1 5 10 15
Val Arg Phe Phe Ala Pro Gly Pro Lys Gln Asn Val His Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:71:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:

Thr Thr Tyr Thr Thr Gly Gly Asn Ala Ala Arg Thr Thr Gln Ala Leu
1 5 10 15

Thr Ser Phe Phe Ser Pro Gly Ala Lys Gln Asp Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:72:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:

Glu Thr Tyr Thr Thr Gly Gly Ser Thr Ala Arg Thr Thr Gln Gly Leu
1 5 10 15

Val Ser Leu Phe Ser Arg Gly Ala Lys Gln Asp Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:73:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:

Ala Thr Tyr Thr Ser Gly Gly Ser Ala Ala Arg Thr Thr Gln Gly Phe
1 5 10 15

Ala Ser Leu Phe Ser Leu Gly Ser Gln Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:74:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:

Ala	Thr	Tyr	Thr	Thr	Gly	Gly	Ser	Val	Ala	Arg	Thr	Thr	His	Gly	Phe
1				5					10				15		
Ser	Ser	Leu	Phe	Ser	Gln	Gly	Ala	Lys	Gln	Asn	Ile	Gln	Leu	Ile	
		20						25				30			

(2) INFORMATION FOR SEQ ID NO:75:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:

Val	Thr	Tyr	Thr	Thr	Gly	Gly	Ser	Gln	Ala	Arg	His	Thr	Gln	Ser	Val
1				5					10			15			
Thr	Ser	Phe	Phe	Thr	Gln	Gly	Pro	Ala	Gln	Arg	Ile	Gln	Leu	Ile	
		20					25				30				

(2) INFORMATION FOR SEQ ID NO:76:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:

His	Thr	Tyr	Thr	Thr	Gly	Gly	Thr	Val	Ala	Arg	Ser	Thr	Gln	Gly	Leu
1				5					10			15			
Val	Gly	Phe	Leu	Ser	Pro	Gly	Pro	Ser	Gln	Asn	Ile	Gln	Leu	Ile	
		20					25				30				

(2) INFORMATION FOR SEQ ID NO:77:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:77:

Thr	Thr	Tyr	Val	Ser	Val	Gly	His	Ala	Ser	Gln	Thr	Thr	Arg	Arg	Val
1				5				10					15		
Ala	Ser	Phe	Phe	Ser	Pro	Gly	Ser	Ala	Gln	Lys	Ile	Gln	Leu	Val	
		20					25					30			

(2) INFORMATION FOR SEQ ID NO:78:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:

Thr	Thr	Thr	Val	Ser	Gly	Gly	His	Ala	Ser	Gln	Ile	Thr	Arg	Gly	Val
1				5				10					15		
Thr	Ser	Phe	Phe	Ser	Pro	Gly	Ser	Ala	Gln	Lys	Ile	Gln	Leu	Val	
		20					25					30			

(2) INFORMATION FOR SEQ ID NO:79:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:

Lys	Thr	Ser	Leu	Thr	Gly	Val	Thr	Arg	Ala	Arg	Ala	Ala	Arg	Leu	
1				5				10					15		
Thr	Ala	Leu	Phe	Ser	Ser	Gly	Pro	Ser	Gln	Arg	Ile	Gln	Leu	Ile	
		20					25					30			

(2) INFORMATION FOR SEQ ID NO:80:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:

Gly Thr Ser Leu Thr Gly Gly Ala Arg Ala Arg Ala Ala Ser Gly Leu
1 5 10 15

Ala Gly Leu Phe Ser Ser Gly Pro Ser Gln Arg Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:81:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:81:

Val Thr Gln Val Ser Pro Pro Gln Ala Gly Tyr Thr Thr Ser Val Leu
1 5 10 15

Thr Gly Ile Leu Ser Pro Gly Ala Lys Gln Asn Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:82:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:82:

Val Thr Gln Val Ser Gly Gly Gln Ala Gly Tyr Thr Thr Ser Val Leu
1 5 10 15

Thr Gly Ile Leu Ser Pro Gly Ala Lys Gln Asn Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:83:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:83:

Gly Thr Tyr Thr Val Gly Gly Ala Ser Ala Phe Thr Thr Ser Arg Leu
1 5 10 15

Thr Ser Leu Phe Ala Leu Gly Pro Ser Gln Arg Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:84:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:84:

Asn Thr His Thr Val Gly Gly Thr Glu Gly Phe Ala Thr Gln Arg Leu
1 5 10 15

Thr Ser Leu Phe Ala Leu Gly Pro Ser Gln Lys Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:85:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:85:

Ser Thr Arg Thr Ala Gly Gly Ala Gln Ala Phe Asn Thr Tyr Gly Val
1 5 10 15

Ala Ser Ile Phe Ser Pro Gly Pro Ser Gln Arg Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:86:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:86:

Gln Thr His Thr Val Gly Gly Ser Thr Ala His Asn Ala Arg Thr Leu
1 5 10 15

Thr Gly Met Phe Ser Leu Gly Ala Arg Gln Lys Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:87:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:87:

Asn Thr Arg Thr Val Ala Gly Ser Ala Ala Ala Thr Thr Arg Gly Phe
1 5 10 15

Thr Ser Met Phe Ser Ser Gly Ser Lys Gln Asn Leu Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:88:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:88:

Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:89:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:89:

Glu	Thr	His	Thr	Thr	Gly	Ala	Val	Ser	Gly	His	Thr	Thr	Asn	Val	Leu
1				5					10					15	
Thr	Ser	Leu	Phe	Ser	Ser	Gly	Ser	Ser	Gln	Asn	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:90:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:90:

Val	Thr	Arg	Thr	Thr	Gly	Glu	Val	Ala	Ala	Arg	Thr	Ala	Asn	Thr	Phe
1				5					10					15	
Ala	Ser	Leu	Phe	Thr	Thr	Gly	Pro	Ser	Gln	Asn	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:91:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:91:

Thr	Thr	Tyr	Ser	Ser	Gly	Gln	Glu	Ala	Gly	Arg	Thr	Val	Ala	Gly	Phe
1				5					10					15	
Ala	Gly	Leu	Phe	Thr	Thr	Gly	Ala	Lys	Gln	Asn	Leu	Tyr	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:92:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:92:

Ser Thr Ser Val Val Gly Gly Arg Gln Ala Ser Ala Thr Phe Arg Phe
1 5 10 15

Thr Ser Phe Phe Ser Arg Gly Pro Thr Gln Glu Ile Lys Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:93:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:93:

Asn Thr Tyr Thr Thr Ala Gly Ser Met Ala Gln Ser Ile Tyr Arg Leu
1 5 10 15

Thr Asp Ile Phe Ser Thr Gly Pro Ser Gln Lys Leu Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:94:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:94:

Arg Thr Ile Leu Met Ala Gly Arg Gln Ala Glu Val Thr Gln Ser Phe
1 5 10 15

Pro Gly Leu Phe Ser Leu Ala Pro Ser Gln Lys Ile His Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:95:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:95:

Asp Thr Tyr Ala Thr Gly Gly Ser Val Ala Ser Ile Met Ala Gly Ile
1 5 10 15

Ala Arg Phe Phe Ser Pro Gly Ala Arg Gln Asp Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:96:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:96:

Glu Thr Tyr Ala Thr Gly Ala Ser Ala Gly His Asp Val Ser Ser Phe
1 5 10 15

Ala Arg Leu Phe Ala Pro Gly Ala Arg Gln Asn Ile Gln Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:97:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:97:

Glu Thr His Arg Thr Gly Gly Ser Ala Ala Arg Ser Thr Ala Gly Val
1 5 10 15

Ala Ser Leu Phe Thr Pro Gly Ala Arg Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:98:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:98:

Asn Thr Arg Ala Val Gly Met Val Gln Ser Arg Thr Thr Tyr Ala Leu
1 5 10 15

Thr Ser Leu Phe Asp Ser Gly Ala Ala Gln Lys Leu Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:99:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:99:

Glu Thr His Val Thr Gly Gly Ser Ala Gly Arg Thr Thr Ala Gly Leu
1 5 10 15

Val Gly Leu Leu Thr Pro Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:100:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:100:

Glu Thr His Val Thr Gly Gly Ser Ala Gly Arg Ser Val Leu Gly Ile Ala
1 5 10 15

Ser Phe Leu Thr Arg Gly Pro Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:101:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:101:

Glu	Thr	Tyr	Thr	Ser	Gly	Gly	Ala	Ala	Ser	His	Thr	Thr	Ser	Thr	Leu
1				5					10				15		
Ala	Ser	Leu	Phe	Ser	Pro	Gly	Ala	Ser	Gln	Arg	Ile	Gln	Leu	Val	
			20					25				30			

(2) INFORMATION FOR SEQ ID NO:102:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:102:

Ala	Thr	Tyr	Thr	Ser	Gly	Gly	Val	Ala	Ser	His	Thr	Thr	Ser	Arg	Phe
1				5					10				15		
Thr	Ser	Leu	Phe	Ser	Ser	Gly	Ala	Ser	Gln	Arg	Ile	Gln	Leu	Val	
			20					25				30			

(2) INFORMATION FOR SEQ ID NO:103:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:103:

Ala	Thr	Tyr	Thr	Ser	Gly	Ala	Val	Ala	Ser	His	Thr	Thr	Ser	Arg	Phe
1				5					10				15		

Thr Ser Phe Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:104:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:104:

Ala Thr Tyr Thr Ser Gly Ala Val Ala Ser His Thr Thr Ser Arg Phe
1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:105:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:105:

Ala Thr Tyr Thr Ser Gly Ala Val Ala Ser His Thr Thr Ser Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:106:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:106:

Glu	Thr	Tyr	Thr	Ser	Gly	Arg	Val	Ala	Gly	His	Thr	Thr	Ser	Gly	Phe
1				5				10						15	
Thr	Ser	Leu	Phe	Ser	Ser	Gly	Ala	Ser	Gln	Arg	Ile	Gln	Leu	Val	
		20					25						30		

(2) INFORMATION FOR SEQ ID NO:107:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:107:

Ala	Thr	Tyr	Thr	Ser	Gly	Gly	Val	Ala	Gly	Arg	Thr	Thr	Ser	Gly	
1					5			10						15	
Phe	Thr	Ser	Leu	Phe	Ser	Ser	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val
			20				25						30		

(2) INFORMATION FOR SEQ ID NO:108:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:108:

Glu	Thr	His	Thr	Thr	Gly	Arg	Val	Ala	Gly	His	Thr	Thr	Ser	Arg	Phe
1					5			10						15	
Thr	Ser	Leu	Phe	Ser	Ser	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val	
			20				25						30		

(2) INFORMATION FOR SEQ ID NO:109:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:109:

Glu Thr His Thr Thr Gly Arg Val Val Gly His Thr Thr Ser Gly
1 5 10 15

Phe Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:110:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:110:

Glu Thr His Thr Thr Gly Arg Val Ala Gly Arg Thr Thr Ser Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:111:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:111:

Thr Thr Tyr Thr Ser Gly Gly Val Ala Gly Arg Thr Thr Ser Gly
1 5 10 15

Phe Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:112:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:112:

Lys	Thr	Tyr	Thr	Ser	Gly	Gly	Ala	Ala	Ser	His	Thr	Thr	Ser	Arg	
							5			10				15	
Phe	Thr	Ser	Leu	Phe	Ser	Pro	Gly	Ala	Ser	Gln	Arg	Ile	Gln	Leu	Val
								20		25				30	

(2) INFORMATION FOR SEQ ID NO:113:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:113:

Ser	Thr	Arg	Val	Thr	Gly	Gly	Gln	Gln	Gly	Arg	Ala	Val	His	Gly	Ile
1				5					10						15
Ala	Ser	Leu	Phe	Ser	Leu	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val	
				20				25						30	

(2) INFORMATION FOR SEQ ID NO:114:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:114:

Ser	Thr	Arg	Val	Thr	Gly	Gly	Gln	Gln	Gly	Arg	Ala	Val	Gln	Gly	Phe
1					5				10						15

Ala Ser Leu Phe Arg Leu Gly Ala Ser Gln Glu Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:115:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:115:

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val His Gly Ile
1 5 10 15

Ala Ser Leu Phe Ser Leu Gly Ala Ser Gln Lys Asn Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:116:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:116:

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly His Ala Ala His Ser Leu
1 5 10 15

Thr Ser Leu Phe Arg Leu Gly Ala Ser Gln Asn Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:117:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:117:

Asn Thr Arg Val Thr Gly Gly Arg Gln Gly Arg Ala Ala His Ser Leu
1 5 10 15

Thr Ser Leu Phe Ser Pro Gly Ala Ser Gln Asn Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:118:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:118:

Gly Thr Arg Val Thr Gly Gly Arg Gln Gly Arg Ala Ala His Ser Leu
1 5 10 15

Thr Ser Leu Phe Ser Pro Gly Ala Ser Glu Asn Ile Arg Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:119:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:119:

Ser Thr Arg Val Ser Gly Gly Gln Gln Gly Arg Ala Ala His Ser Leu
1 5 10 15

Thr Ser Leu Phe Thr Leu Gly Ala Ser Gln Asn Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:120:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:120:

Ser Thr His Val Thr Gly Ala Leu Gln Gly Arg Ala Ala Tyr Gly Ile
1 5 10 15

Thr Ser Phe Leu Ser His Gly Pro Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:121:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:121:

Ser Thr Gln Val Met Gly Gly Gln Gln Gly Arg Ala Ala Tyr Ser Leu
1 5 10 15

Ala Ser Leu Leu Ser Pro Gly Ala Asn Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:122:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:122:

Ser Thr Gln Val Met Gly Gly Gln Gln Gly Arg Ala Ala Tyr Ser Leu
1 5 10 15

Ala Ser Leu Leu Gly Pro Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:123:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:123:

Ser	Thr	Gln	Val	Met	Gly	Gly	Gln	Gly	Arg	Ala	Ala	Tyr	Ser	Leu
1				5				10				15		
Ala	Ser	Leu	Leu	Ser	Pro	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val
				20				25			30			

(2) INFORMATION FOR SEQ ID NO:124:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:124:

Arg	Thr	Arg	Thr	Val	Gly	Gly	Gln	Val	Gly	His	Ser	Val	Arg	Gly	Phe
1				5				10				15			
Thr	Ser	Leu	Phe	Ser	Ala	Gly	Ser	Ala	Gln	Asn	Ile	Gln	Leu	Ile	
				20				25			30				

(2) INFORMATION FOR SEQ ID NO:125:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:125:

Gln	Thr	Arg	Thr	Val	Gly	Gly	Gln	Val	Gly	His	Ser	Val	Arg	Gly	Phe
1				5				10				15			

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:126:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:126:

Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asp Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:127:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:127:

Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
1 5 10 15

Thr Ser Leu Leu Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:128:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:128:

Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Leu
1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:129:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:129:

Gln Thr Arg Thr Val Gly Gly Gln Met Gly His Gly Val Arg Gly Leu
1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Arg Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:130:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:130:

Gln Thr His Thr Val Gly Gly Gln Met Gly His Gly Val Arg Gly Leu
1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:131:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:131:

Gln	Thr	His	Thr	Val	Gly	Gly	Gln	Met	Gly	His	Gly	Val	Arg	Gly	Leu
1				5					10					15	
Thr	Asn	Leu	Phe	Ser	Ala	Gly	Ser	Ala	Gln	Asn	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:132:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 24 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:132:

Glu	Thr	His	Val	Thr	Gly	Gly	Ser	Ala	Gly	His	Thr	Val	Ser	Gly	Phe
1				5					10				15		
Val	Ser	Leu	Leu	Ala	Pro	Gly	Ala								
			20												

(2) INFORMATION FOR SEQ ID NO:133:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 1
- (D) OTHER INFORMATION: /label=Ahe
/note=2-amino heptanoic is butyl alanine

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:133:

Xaa Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Ser Gly
1 5 10 15

Phe Val Ser Leu Leu Ala Pro Gly Ala Lys Gln Asn Val Gln Leu
20 25 30

(2) INFORMATION FOR SEQ ID NO:134:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 6 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:134:

Ser Leu Phe Xaa Xaa Gly
1 5